SonarQube local Setup on Ubuntu linux

Step 1: Update the System

1. **Update the package list**:

`sudo apt update`

This updates the package list from the Ubuntu repositories to ensure you have the latest information about available software.

2. **Upgrade installed packages**:

`sudo apt upgrade -y`

This upgrades all installed packages to their latest versions. The -y flag automatically accepts the prompts.

Step 2: Install Java

1. **Install OpenJDK 17**:

`sudo apt install openjdk-17-jdk -y`

Installs the OpenJDK 17 development kit. SonarQube requires Java 11 or 17, and this command ensures you have a compatible version.

2. **Verify the installation**:

`java -version`

This checks the installed Java version to confirm that the correct version is set up.

Step 3: Install PostgreSQL

SonarQube uses PostgreSQL as its database.

1. Install Dependencies

- Install tools needed to manage PostgreSQL repositories and certificates:

`sudo apt install curl ca-certificates`

  - curl: Used for downloading the PostgreSQL signing key.

  - ca-certificates: Ensures secure communication using certificates.

- Create a directory for the PostgreSQL repository configuration:

`sudo install -d /usr/share/postgresql-common/pgdg`

Ensures a directory is created with the correct permissions.

- Download and add the PostgreSQL signing key:

Fetches the GPG key for verifying PostgreSQL packages.

2. Add PostgreSQL Repository

- Add the PostgreSQL repository to the system's sources list:

- o lsb_release -cs: Fetches the Ubuntu release codename (e.g., focal for Ubuntu 20.04).

- o Adds the repository for PostgreSQL packages.

3. Install PostgreSQL 15

- Update the package list to include the new PostgreSQL repository:

- Install PostgreSQL 15:

4. Configure PostgreSQL

- Switch to the postgres user (the default database administrator):

- Create a user named sonar:

- Create a database named sonar owned by the sonar user:

- Set a password for the sonar user:

- Exit the postgres user:

Step 4: Install SonarQube

1. Download SonarQube

Downloads the SonarQube binaries.

2. Extract and Move SonarQube

unzip sonarqube-10.5.1.90531.zip

sudo mv sonarqube-10.5.1.90531 /opt/sonarqube

- unzip: Extracts the SonarQube archive.

- mv: Moves the SonarQube directory to /opt, a common location for third-party software.

3. Create a SonarQube User

- Add a system user for SonarQube without a home directory or login access:

sudo adduser --system --no-create-home --group --disabled-login sonarqube

- Change ownership of the SonarQube directory:

sudo chown -R sonarqube:sonarqube /opt/sonarqube

4. Configure SonarQube

- Edit the configuration file:

sudo vi /opt/sonarqube/conf/sonar.properties

- Uncomment and configure the database properties:

sonar.jdbc.username=sonar

sonar.jdbc.password=your_password

sonar.jdbc.url=jdbc:postgresql://localhost/sonar

Step 5: Create a Systemd Service File

1. Create the SonarQube Service File

- Edit or create a service file:

sudo vi /etc/systemd/system/sonarqube.service

- Add the following content:

[Unit]

Description=SonarQube service

After=syslog.target network.target

[Service]

Type=forking

ExecStart=/opt/sonarqube/bin/linux-x86-64/sonar.sh start

ExecStop=/opt/sonarqube/bin/linux-x86-64/sonar.sh stop

User=sonarqube

Group=sonarqube

Restart=always

LimitNOFILE=65536

LimitNPROC=4096

[Install]

WantedBy=multi-user.target

2. Start and Enable the Service

- Reload the systemd daemon to recognize the new service:

sudo systemctl daemon-reload

- Start the SonarQube service:

sudo systemctl start sonarqube

- Enable the service to start on boot:

sudo systemctl enable sonarqube

Step 6: Configure System Limits

1. Increase File Descriptors and Processes Limits

- Check the current file descriptor limit:

ulimit -n

- Edit the limits configuration file:

sudo vi /etc/security/limits.conf

- Add the following lines:

sonarqube - nofile 65536

sonarqube - nproc 4096

2. Set Virtual Memory Limits

- Temporarily set the vm.max_map_count:

sudo sysctl -w vm.max_map_count=262144

- Make the change permanent:

sudo vi /etc/sysctl.conf

- Add:

vm.max_map_count=262144

- Apply the changes:

sudo sysctl -p